2008 Iowa Farm Business Management Career Development Event

INDIVIDUAL EXAM (150 pts.)

Select the best answer to each of the 75 questions to follow (2 pts. ea.). Code your answers on the answer sheet provided. Be sure to erase completely any answers that you change. You have 120 minutes (maximum) to complete this exam.

Section A. Economic Principles

1. This curve shows the different combinations of a product quantity that will be sold in a market by sellers at different prices of that product:
   a. demand curve
   b. production possibilities curve
   c. supply curve
   d. total product curve

2. If TC = total cost, Q = quantity of output, and TC = 80 + 2Q, what is the total cost of producing a quantity of 100?
   a. 200
   b. 280
   c. 120
   d. 2080

3. The point of intersection of a market demand curve and a market supply curve is known as the point of:
   a. equilibrium
   b. diminishing returns
   c. break even
   d. profit maximization

4. An increase in the willingness and ability to produce a product by producers in a market would be shown graphically as a shift:
   a. right of a supply curve
   b. right of a total revenue curve
   c. up of a supply curve
   d. right of a demand curve

5. An opportunity cost is:
   a. the cash cost of an opportunity pursued
   b. the noncash cost of an opportunity foregone
   c. the cash cost of an opportunity foregone
   d. what one has to pay up front to pursue an opportunity

6. Total cost divided by quantity of output is:
   a. marginal cost
   b. average variable cost
   c. marginal cost
   d. average total cost

7. A variable cost is normally defined as one that varies with:
   a. time
   b. quantity of output
   c. price of the output
   d. uncertainty

8. The point where marginal product starts to decline is the:
   a. point of diminishing returns
   b. breakeven point
   c. point of profit maximization
   d. equilibrium point

9. Which of the following is true for a firm that is <u>NOT</u> minimizing its costs of producing a given level of output?
   a. it is not producing the profit-maximizing output
   b. costs can NOT be reduced
   c. profit is not maximized
   d. breakeven output has been surpassed

10. What is the future value of $100, 5 years from today, if the interest rate is 8%?
   a. 100 (1.05)
   b. 100 (1.05 (1.08)
   c. $100 (1.08)^5$
   d. $100 (1.05)^8$

11. Some change in a business would make economic sense if the change:
   a. increases total income for the business
   b. decreases total cost for the business
   c. increases profit for the business
   d. reduces total debt for the business

12. Which of the following would NOT be included in a projected cash flow statement?
   a. family living expenses
   b. cash paid for machinery
   c. current principal payments on long term debt
   d. machinery depreciation expenses

13. Projected cash flows for a grain farmer are (or can be) affected by:
    a. weather conditions
    b. grain prices
    c. input prices
    d. all of the above

14. What is the economic term used to describe products sold to a foreign country?
    a. imports
    b. gross foreign product
    c. exports
    d. trade deficit

15. If a firm can sell all of its output at the going market price of $4.00, what is the firm's marginal revenue of selling its last unit of output if it produces 1,000 units?
    a. $4,000
    b. $250
    c. $4.00
    d. $(4.00/1000)

16. If a farmer has a 30% marginal tax rate and an <u>after-tax</u> cost of $1.40, what is the farmer's before tax cost?
    a. $2.00
    b. $2.30
    c. $2.60
    d. $1.40

17. The federal tax form that reports wages earned and taxes withheld is which of the following forms?
    a. W-2
    b. 1040
    c. 1099
    d. SE

18. What business type is organized and structured as a corporation but the earnings are taxable to the individual owners?
    a. cooperative
    b. Subchapter S corporation
    c. partnership
    d. sole proprietorship

19. A government-set, maximum allowable price is known as:
    a. price ceiling
    b. price floor
    c. price support
    d. price subsidy

20. If a firm is experiencing declining average total costs of production as it increases output quantity, this is evidence of:
    a. diminishing marginal product
    b. declining profits
    c. increasing demand
    d. economies of scale

21. A feedlot operator purchased 100 feeder steers with an average weight of 600 pounds and sells them at an average weight of 1,050 pounds. Feed cost per pound of gain is $0.50. What is total feed cost?
    a. $225
    b. $525
    c. $300
    d. $22,500

22. Which financial ratio compares total dollars of debt to total dollars of assets?
    a. current ratio
    b. debt/equity ratio
    c. debt/asset ratio
    d. return on assets

23. Net worth is a measure of:
    a. solvency
    b. profitability
    c. liquidity
    d. debt

24. What kind of interest on a firm's balance sheet is owed since the last loan payment?
    a. current
    b. prime
    c. account receivable
    d. accrued

25. Short-run production costs include expenditures on:
    a. fixed inputs only
    b. fixed inputs and variable inputs
    c. variable inputs only
    d. purchased inputs only

Section B. Records and Analysis

Use the attached ending net worth statement (balance sheet) and net farm income statement to answer questions #26-35.

26. What were this farm's total liabilities on January 1, 2008?
    a. $2,169, 441
    b. $2,846,292
    c. $1,073,129
    d. $370,101

27. The farm's market value net worth increased by _____% from a year ago.
    a. 17.0%
    b. 7.7%
    c. 7.1%
    d. $126,358

28. The cost value of the machinery is equal to:
    a. what they could probably sell it for on the date of the statement
    b. what they originally paid for it
    c. what they originally paid for it minus the amount of depreciation expense taken
    d. the value shown on their income tax depreciation schedule

29. Using 'market' values, the farm's total debt-to-equity ratio is:
    a. 61%
    b. 98%
    c. 38%
    d. 49%

30. How much is this farm's 'working capital'?
    a. $16,092
    b. $542,132
    c. $370,101
    d. $172,031

31. The FFA farm has agreed to pay its landlord $32,000 to cash rent 160 acres in 2008. Where would the $32,000 be entered on the Net Worth Statement?
    a. current assets
    b. current liabilities
    c. fixed liabilities
    d. it would not be entered

32. If FFA farm borrowed $100,000 to buy feeder cattle on Nov. 1, 2007, at 6.5% annual interest, how much accrued interest would they owe on Jan. 1, 2008?
    a. $6,500
    b. $1,086
    c. $542
    d. $0

33. From the Net Worth Statement and Net Farm Income Statement, what was this farm's return on equity (ROE) for 2007 using market values? All labor was paid a wage.
    a. 2.3%
    b. 3.8%
    c. 4.0%
    d. 3.7%

34. From the Net Farm Income Statement, how much was this farm's Gross Farm Revenue after adjusting for beginning and ending inventories?
    a. $631,507
    b. $623,732
    c. $639,282
    d. $517,084

35. If FFA farm had sold some excess machinery in 2007, the revenue received would be entered as:
    a. cash income
    b. income adjustments
    c. depreciation
    d. sales of farm capital assets

Use the attached cash flow budget projection to answer questions #36-44.

36. How much cash does this farm expect to take in from crop sales during the coming year?
    a. $469,260
    b. $336,109
    c. $78,210
    d. $37,309

37. Approximately, how many dollars of operating loans does this farm need to borrow in Jan.-Feb. to project positive cash balance of at least $2,000 at the end of February?
    a. none
    b. at least $26,356
    c. at least $28,356
    d. at least $42,448

38. In what periods do they have to pay their cash rent in 2008?
    a. Jan.-Feb. and Nov.-Dec.
    b. Mar.-Apr. and Nov.-Dec.
    c. July-Aug. and Nov.-Dec.
    d. Nov.-Dec. and Jan.-Feb.

39. In which period does this farm project its largest net cash flow surplus?
    a. Jan.-Feb.
    b. May-June
    c. July-August
    d. Nov.-Dec.

40. How could FFA Farm achieve a positive cash flow in the January-February period without borrowing operating loan funds?
    a. delay paying for seed and fertilizer
    b. sell crops earlier
    c. put off repayment of debt
    d. any of these

41. How much is this farm's projected cash gross farm income for 2008?
    a. $469,260
    b. $861,769
    c. $874,010
    d. $829,639

42. Which of the following expenditures is included in a cash flow budget but not in a net farm income statement?
    a. Wages paid to farm employees
    b. Purchases of fertilizer
    c. Principal payments on a loan
    d. Depreciation

43. In how many of the six budgeting periods will FFA Farm need to borrow operating loan funds?
    a. 6
    b. 4
    c. 3
    d. 2

44. FFA Farm is projecting that they will borrow _____ for the purchase of machinery in 2008.
    a. $20,000
    b. $25,000
    c. $5,000
    d. Can't tell from the budget.

Refer to the attached "Grade A Dairy" budget to answer questions #45-54.

45. How much profit per cow is projected?
    a. $4,458.90
    b. $1,017.59
    c. $221.39
    d. $4,237.51

46. What price per cwt. is needed from milk sales to just pay for all costs, after receiving income for sales of cull cows, dairy calves, and replacement heifers?
    a. $17.66
    b. $15.08
    c. $11.76
    d. $.15

47. What is the breakeven level of milk production per year needed to pay all costs, after receiving income for cull cows, dairy calves and replacement heifers?
    a. $226 cwt.
    b. $265 cwt.
    c. $240 cwt.
    d. $215 cwt.

48. How much is the projected feed cost per cwt. of milk sold for this budget?
    a. $4.00
    b. $17.66
    c. $14.34
    d. $7.54 per cwt.

49. If the price of corn increases to $5.00 per bushel, by how much will profit per cow change (all else equal)?
    a. decrease $113
    b. increase $113
    c. decrease $565
    d. decrease $452

50. Judging from income section of the budget, the average number of years each cow is kept in production is:
    a. 2-3 years
    b. 4 years
    c. 5 years
    d. 7 years

51. Based on the feed requirements shown in the budget, how many pounds of feed are required per pound of milk produced? Do not convert pounds of feed to dry matter equivalent.
    a. 3.62
    b. 2.71
    c. 1.58
    d. .16

52. If a dairy heifer is expected to produce revenue in excess of her variable costs of $500 per year for 3 years and can be sold for $500 at the end of the 3rd year, how much is her present value? Use a discount rate of 10% annually, and assume net revenue is received at the beginning of each year.
    a. $2,000
    b. $1,744
    c. $1,620
    d. $1,818

53. If a new dairy barn can be constructed for $120,000, and its useful life is 30 years with a salvage value of $30,000, how much is its average annual depreciation expense?
    a. $5,000
    b. $4,000
    c. $3,000
    d. $2,000

54. How much is the average annual interest cost on the same building over its lifetime if the farm's cost of capital is 7%?
    a. $8,400
    b. $6,300
    c. $5,250
    d. $350

Section C. Risk Management

55. A wider basis means there is greater difference between:
    a. the prices of two futures contracts
    b. two cash market prices
    c. a futures price and a cash market price
    d. a borrowing interest rate and a savings interest rate

56. Which of the following marketing alternatives is least likely to establish a price in advance of product delivery to the buyer?
    a. cash sale
    b. hedge with futures
    c. cash forward contract

d. b and c

57. A cattle feeder farmer who has hedged future corn purchases is attempting to protect against future:
    a. corn price increases
    b. corn price decreases
    c. feeder cattle price increases
    d. market cattle price decreases

58. If you buy a put option you have the:
    a. right to sell a futures contract
    b. obligation to make delivery on a futures contract
    c. right to buy a futures contract
    d. obligation to take delivery on a futures contract

59. Which of the following is a specific kind of rental agreement between a landlord and a tenant?
    a. forward contract
    b. cash
    c. lease
    d. charter

60. In March a farmer sells December corn futures at $5.45 to hedge new crop corn. At harvest, the farmer buys back the contract for $4.85 and sells corn in the cash market for $4.55. What is the net price of corn received by the farmer (ignoring all commission fees)?
    a. $5.45
    b. $5.15
    c. $4.55
    d. $5.75

61. The following corn producer who is most likely to benefit from rising corn prices is one who previously:
    a. sold corn futures
    b. sold corn with a cash forward contract
    c. bought corn put options
    d. took his/her chances in the cash market

62. Money to be received at some time in the future is worth:
    a. more the further into the future the money is to be received
    b. less the further into the future the money is to be received
    c. more the higher the interest rate is
    d. both b and c are true

63. Margins and commissions are typically paid by a hedger to:
    a. a lawyer
    b. another hedger
    c. a speculator
    d. a broker

64. The price paid for an option is called:
    a. the basis
    b. the strike price
    c. the premium
    d. the commission fee

65. A cooperative patronage refund paid to a producer member is typically based on that member's:
    a. dollar investment in the co-op
    b. dollar business volume done with the co-op
    c. taxable income
    d. proximity to retirement age

66. Assume currently in March the cash corn price is $5.00 and the December corn futures price is $5.45. In December, the most likely observation would be:
    a. cash corn price = $5.45
    b. basis = $0.45
    c. December corn futures price < $5.45
    d. basis < $0.45

67. A "limit" move in a futures market typically means there has been:
    a. a maximum allowable price change
    b. a limited number of trades
    c. a restriction placed on how far a commodity can be shipped
    d. an expiration of allowable trading time

68. The amount of money initially paid by a producer to hedge future sales of a commodity with futures contracts is called?
    a. margin money
    b. the basis
    c. present value
    d. the spread

69. Which of the following is most likely to <u>lower</u> the premium paid for a call option?
    a. lower strike price
    b. increasing futures prices
    c. decreasing futures prices
    d. all of the above

70. Commodity futures contracts are bought and sold at:
    a. Wal-Mart
    b. exchanges
    c. local market advisory businesses
    d. governmental ag marketing agencies

71. Which of the following marketing strategies is most like buying insurance to protect against falling prices with no obligation to use the insurance:
    a. sell in the cash market
    b. sell futures
    c. buy put options
    d. sell on a cash contract

72. Marketing to a subset of market consumers who are somewhat narrowly defined and who are believed to have special or unique needs is called this type of marketing:
    a. direct
    b. focus group
    c. niche
    d. discrimination

73. If a firm has quantity sales of its product increase 10% as a result of the firm lowering its product price by 20%, the firm's:
    a. total costs will decrease
    b. total revenue will increase
    c. total revenue will decrease
    d. a and b are true

74. An option's strike price is:
    a. The same as the premium
    b. Known at the time the option is bought or sold
    c. Is determined at expiration time by the option's buyers and sellers
    d. Is the same as the current underlying futures price

75. A hog farmer who believes cash hog prices are going to increase is described as being:
    a. Hoggish
    b. Bearish
    c. Sheepish
    d. Bullish

Team Participation Event – "Individual" Portion
2008 Iowa Vo-Ag/FFA
Farm Business Management Career Development Event
(Maximum possible pts: 5 per individual and 15 per team)

Instructions: The questions below are related to the problems you just worked on as a team. Select the best answer (1 pt. each). Code your answers on the answer sheet provided. Be sure to erase completely any answers that you change.

1. Assuming C = corn, S = soybeans, and A = alfalfa, the two budgets that were used to answer the "team" portion of this contest were for which of the following production alternatives:
   a. CSC, CC
   b. CS, CA
   c. CC, SS
   d. CS, CC

2. How many corn acres can be planted per unit (bag) if there are 80,000 K. (kernels) per unit and 30,000 K. are planted per acre?
   a. .375
   b. 2.67
   c. it depends on the crop rotation used
   d. it depends on the cost per unit of seed

3. Nitrogen expenses per acre of corn production:
   a. depended on the crop rotation used
   b. depended on the price per unit of nitrogen used
   c. depended on the quantity of nitrogen per acre applied
   d. all of the above are true

4. Which of the following budgeted expenses had (or is most likely to have) both fixed and variable (per acre) components?
   a. seed
   b. land
   c. combine
   d. crop insurance

5. From a corn production budget, the breakeven price for corn can be calculated as follows:
   a. (total revenue per acre – total cost per acre) ÷ yield per acre
   b. total cost per acre ÷ yield per acre
   c. total revenue per acre ÷ yield per acre
   d. (total costs per acre – total fixed costs per acre) ÷ yield per acre

ATTACHMENTS

Individual Exam
2008 Iowa Vo-Ag FFA
Farm Business Management CD Event

Grade A Dairy - One Cow Unit

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Income			**Price**	**Unit**		**Quantity**	**Unit**		**Total**
Milk sales*			$16.00	per cwt	x	240	cwt	=	$3,840.00
Cull cow	0.39	head x	$0.60	per lb	x	1350	lbs	=	$315.90
Dairy calf			$300.00	per head	x	0.52	head	=	$156.00
Replacement heifer			$700.00	per head	x	0.21	head	=	$147.00
Gross Income									$4,458.90

Variable Costs	**Price**	**Unit**		**Quantity**	**Unit**		**Total**
Feed Costs							
Corn equivalents	$4.00	per bu	x	113	bu	=	$452.00
Corn Silage	$36.00	per ton	x	8	tons	=	288.00
Hay equivalents	$100.00	per ton	x	6	tons	=	600.00
Salts and minerals	$0.13	per lb	x	323	lbs	=	41.99
Protein supplement	$0.12	per lb	x	1855	lbs	=	222.60
Cottonseed	$0.06	per lb	x	1361	lbs	=	81.66
Fat	$0.30	per lb	x	111	lbs	=	33.30
Milk replacer, calf starter							90.00
Other							0.00
Total Feed Costs							$1,809.55
Veterinary and health							$118.00
Fuel, utilities and repairs							160.00
DHIA & accounting							30.00
Breeding fees							50.00
Bedding, supplies and miscellaneous							170.00
Hauling	$0.29	per cwt					69.60
Interest on variable costs	9%			3	month		54.16
Labor	$14.00	per hour		70	hours		980.00
Total Variable Costs							$3,441.31
Income over Variable Costs							$1,017.59
Fixed Costs							
Machinery, equipment, facilities							$520.00
Interest, insurance on herd							276.20
Total Fixed Costs							$796.20
Total of All Costs							$4,237.51
Income over All Costs							
Income from cull cows, calves, and heifers							$618.90
Break-even selling price for variable costs							per cwt
Break-even selling price for all costs							per cwt

**Milk price per cwt. is a total based on the following price components: butterfat, protein, other solids, producer price differential, quality, volume, and capital payout.*

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Farm Financial Statements

Ag Decision Maker -- Iowa State University Extension

FFA FARM

Net Worth Statement

Name **FFA FARM** Date **01/01/08**

Farm Assets	Cost Value	Market Value	Farm Liabilities	Market Value
Current Assets			***Current Liabilities***	
Checking and savings accounts	$16,092	$16,092	Accounts payable	$29,540
Crops held for sale/feed	$334,600	$334,600	Farm taxes due	$9,344
Investment in growing crops			Current notes and credit lines	$210,554
Commercial feed on hand	$9,100	$9,100		
Prepaid expenses	$12,750	$12,750	Accrued interest - short	$9,216
Market livestock	$169,590	$169,590	- fixed	$37,388
Supplies on hand			Due in 12 months - fixed	$74,059
Accounts receivable				
Other current assets			Other current liabilities	
Total Current Assets	$542,132	$542,132	Total Current Liabilities	$370,101
Fixed Assets			***Fixed Liabilities***	
Unpaid coop. distributions	$14,435	$14,435	Notes and contracts remainder (Sched. Q)	$703,028
Breeding livestock	$49,125	$49,125	Machinery	
Machinery & equipment	$313,932	$455,600	Land	
Buildings/improvements	$489,817	$617,000		
Farmland	$760,000	$1,168,000		
Farm securities, certificates				
Other fixed assets			Other fixed liabilities	
Total Fixed Assets	$1,627,309	$2,304,160	Total Fixed Liabilities	$703,028
A) Total Farm Assets	**$2,169,441**	**$2,846,292**	**B) Total Farm Liabilities**	**$1,073,129**
C) Farm Net Worth	**$1,096,312**	**$1,773,163**		
D) Farm Net Worth Last Year	**$1,077,994**	**$1,646,805**		
E) Change in Farm Net Worth	**$18,319**	**$126,358**		

Net Farm Income Statement

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See the Financial Files for more information.

Name	FFA FARM	Year	2007

Income

Cash Income		*Income Adjustments*	Ending	Beginning
Sales of livestock bought for resale		Crops held for sale or feed (Sched. A)	$334,600	$346,875
Sales of market livestock, grain, etc.	$582,865	Market livestock (Sched. E)	$169,590	$163,590
Cooperative distributions paid		Accounts receivable (Sched. G) and		
Agricultural program payments	$18,790	other current assets		
Crop insurance proceeds		Unpaid coop. distributions (Sched. H)	$14,435	$14,435
Custom hire income		Breeding livestock (Sched. I)	$49,125	$50,625
Other cash income	$5,672	Subtotal of Adjustments	$567,750	$575,525
Sales of breeding livestock	$24,180	Value of Home Used Production (d)		
Total Cash Income (a)	$631,507	**Gross Farm Revenue (e)**		

Expenses

Cash Expenses		*Expense Adjustments*	**Beginning**	**Ending**
Car and truck expenses	$1,894	Investment in growing crops	$5,850	
Chemicals	$40,760	Commercial feed on hand	$5,600	$9,100
Conservation expenses		Prepaid expenses		$12,750
Custom hire		Supplies on hand		
Employee benefits	$1,780		**Ending**	**Beginning**
Feed purchased	$104,310	Accounts payable	$29,540	$36,589
Fertilizer and lime	$35,500	Farm taxes due	$9,344	$8,480
Freight, trucking	$12,290	Accrued interest	$46,604	$49,291
Gasoline, fuel, oil	$23,650	Subtotal of Adjustments	$96,938	$116,210
Insurance	$6,500		g	h
Interest paid	$85,511	Depreciation (i)		$60,661
Labor hired	$28,000	Gross Farm Expenses (j)		$558,473
Pension and profit-share plans				
Rent or lease payments	$72,800	**Net Farm Income From Operations (k)**		**$65,259**
Repairs, maintenance	$12,333			
Seeds, plants	$28,560	Sales of Farm Capital Assets (l)		
Storage, warehousing		Cost Value of Items Sold (m)		
Supplies purchased	$2,375	Capital Gains or Losses (n) (l - m)		
Taxes (farm)	$8,980			
Utilities	$17,358	**Net Farm Income (o)**		**$65,259**
Vet. fees, medicine, breeding	$11,623			
Other cash expenses	$4,560			
Livestock purchased	$18,300			
Total Cash Expenses (f)	$517,084			

Cash Flow Budget

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Name: FFA FARM

Year: 2008

CASH INFLOWS Operating	Total for Year	January February	March April	May June	July August	September October	November December
Livestock income	469,260	78,210	78,210	78,210	78,210	78,210	78,210
Sales of crops	336,109	37,309	163,309	37,309	0	0	98,182
Other crop income	0	0	0	0	0	0	0
USDA payments	18,000	9,000	0	0	0	9,000	0
Custom hire income	0	0	0	0	0	0	0
Farm rents, interest	0	0	0	0	0	0	0
Other	6,000	1,000	1,000	1,000	1,000	1,000	1,000
Sales of Capital Assets	5,000	5,000	0	0	0	0	0
Financing							
Total new short-term loans to receive	0	0	0	0	0	0	0
New term loans to receive	20,000	0	0	20,000	0	0	0
Non-farm Income	7,400	400	400	2,900	400	400	2,900
Total Cash Inflows	**861,769**	**130,919**	**242,919**	**139,419**	**79,610**	**88,610**	**180,292**

CASH OUTFLOWS Operating	Total for Year	January February	March April	May June	July August	September October	November December
Seed	54,540	18,180	18,180	0	0	0	18,180
Fertilizer and lime	85,900	28,633	28,633	0	0	0	28,633
Pesticides	24,320	0	24,320	0	0	0	0
Crop insurance	12,360	0	0	0	0	12,360	0
Drying fuel	19,600	0	0	0	0	19,600	0
Custom hire or machine rental	0	0	0	0	0	0	0
Other cash costs per acre	10,200	1,700	1,700	1,700	1,700	1,700	1,700
Purchased crops	0	0	0	0	0	0	0
Purchased livestock	22,500	3,750	3,750	3,750	3,750	3,750	3,750
Purchased feed	157,500	26,250	26,250	26,250	26,250	26,250	26,250
Health and veterinary	11,250	1,875	1,875	1,875	1,875	1,875	1,875
Marketing	13,500	2,250	2,250	2,250	2,250	2,250	2,250
Other cash costs per head	0	0	0	0	0	0	0
Real estate taxes	16,000	0	8,000	0	0	8,000	0
Cash rent	100,000	0	50,000	0	0	0	50,000
Hired labor	30,000	5,000	5,000	5,000	5,000	5,000	5,000
Repairs and upkeep	13,000	2,889	1,444	1,444	1,444	2,889	2,889
Fuel and lubrication	25,000	2,500	5,000	5,000	2,500	5,000	5,000
Other fixed expenses	6,000	1,000	1,000	1,000	1,000	1,000	1,000
Equipment lease payments	0	0	0	0	0	0	0
Purchases of Capital Assets	25,000	0	0	25,000	0	0	0
Financing							
Accounts payable	29,540	29,540	0	0	0	0	0
Short term notes due	22,500	22,500	0	0	0	0	0
Term loan payments	132,300	20,300	45,800	1,300	62,300	1,300	1,300
Non-farm Expenditures							
Family living expenses	30,000	5,000	5,000	5,000	5,000	5,000	5,000
Non-farm investments	33,000	2,000	13,000	12,000	2,000	2,000	2,000
Total Cash Outflows	**874,010**	**173,367**	**241,203**	**91,569**	**115,069**	**97,974**	**154,827**

SUMMARY	Total for Year	January February	March April	May June	July August	September October	November December
Net Cash Flow	**(12,241)**	**(42,448)**	**1,716**	**47,850**	**(35,459)**	**(9,364)**	**25,465**
Beginning cash balance	16,092	16,092	(26,356)	(24,640)	23,210	(12,250)	(21,614)
New operating loan received	0						
Repayment of operating loan	0						
Interest paid on oper. loan balance	0	0	0	0	0	0	0
Ending cash balance	3,851	(26,356)	(24,640)	23,210	(12,250)	(21,614)	3,851
Operating Loan Balance							
Beginning Balance	188,691	188,691	188,691	188,691	188,691	188,691	188,691
Ending Balance	188,691	188,691	188,691	188,691	188,691	188,691	188,691

Team Participation Event – "Team" Portion (35 pts.)

2008 Iowa Vo-Ag/FFA
Farm Business Management Career Development Event

As a group (or team), you are to collectively select the best answer to each question below (7 pts. each). Code your answers on the answer sheet provided (one answer sheet per team). Be sure to erase completely any answers that your team changes.

This activity is designed to test your ability as a group to 1) apply your knowledge of economic and business concepts to actual firm decisions, and 2) generalize and summarize the basic content and implications of economic articles and reports. The applications will focus on information summarized in selected publications previously cited as reference materials for this event.

In particular, this activity focuses on sub topics of farm management related to corn production and budgeting which is important to many Iowa farmers if they want to improve the returns to their agricultural operations.

Attached you will find corn enterprise budgets that have been prepared by extension specialists at Iowa State University. Production alternatives represented by these budgets are 1) corn following corn and 2) corn following soybeans. Refer to these budgets, when appropriate, for the 'team' portion of this event.

1. Based on the attached budgets, what is true about the breakeven price of corn?
   a. not enough information given to calculate
   b. it is or should be the same for "corn following corn" as for "corn following soybeans"
   c. it decreases with increases in yield
   d. it increases with increases in seed units planted per acre

2. Which of the following appears to be an advantage of producing "corn following soybeans" versus "corn following corn"?
   a. higher yields
   b. lower nitrogen expenses
   c. lower harvest expenses
   d. a and b

3. In budgeting land expenses for corn production:
   a. none would be included if the producer owns the land and has it paid for
   b. one can use cash rent equivalents that vary with land productivity
   c. one common approach is to include the land price per acre divided by the yield per acre
   d. all of the above are true

4. Based on the attached budgets, assuming there are 80,000 K (kernels) per unit (or bag), what is the budgeted seed expense per unit?
   a. $168.00
   b. $2.10
   c. $210.00
   d. none of the above

5. Your team has been asked to prepare a different "corn following corn" budget for a higher yielding, yet more expensive seed variety. Assume also the only budget change would be for the seed expense which would be 20% greater for the new seed. What is your budgeted new seed expense per acre for the original 145 bu. per acre land?
   a. $75.60
   b. $64.26
   c. $63.00
   d. $88.20

6. Your team has been asked to prepare a new "corn following soybeans" budget for land with a cash rent equivalent expense of $245.00 expected to yield 200 bu. per acre. If these are the only budgeted changes compared to the given budget for the 180 bu. per acre land, what is your team's new estimate of total cost per bushel?
   a. $3.43
   b. $3.18
   c. $3.54
   d. $3.08

7. Assume a two-year production period for a producer with a corn selling price of $5.00 per bu., and ignore time value of money considerations. If this producer adopts a "corn following corn" production strategy, the budgeted expenses for the 165 bu. per acre land would result. If this producer adopts a "corn following soybeans" production strategy, the budgeted expenses for the 180 bu. per acre land would be realized for the year corn is planted. Which of the following is the highest profit per acre for the year soybeans are planted that would make the "corn following corn" rotation preferred?
   a. < $163
   b. < $82
   c. < $141
   d. < $44

ATTACHMENTS

Team Participation Event – "Team" Portion
2008 Iowa Vo-Ag FFA
Farm Business Management CD Event

Estimated Costs of Crop Production in Iowa - 2008

Corn following Corn

	125 bu. per acre		145 bu. per acre		165 bu. per acre		
	Fixed	**Variable**	**Fixed**	**Variable**	**Fixed**	**Variable**	**Your Estimate**
Preharvest Machinery [1/]	$20.60	$19.80	$20.60	$19.80	$20.60	$19.80	$
Seed, Chemical, etc.	**Units**		**Units**		**Units**		
Seed @ $2.10 per 1000 k.	25,000	$52.50	30,000	$63.00	35,000	$73.50	$
Nitrogen @ $0.46 per lb.	175	80.50	175	80.50	175	80.50	
Phosphate @ $0.50 per lb.	45	22.50	55	27.50	60	30.00	
Potash @ $0.27 per lb.	40	10.80	45	12.15	50	13.50	
Lime (yearly cost)		7.00		7.00		7.00	
Herbicide		25.20		25.20		25.20	
Insecticide		17.85		17.85		17.85	
Crop Insurance		15.00		15.00		15.00	
Miscellaneous		8.00		9.00		10.00	
Interest on preharvest variable costs (8 months @ 8%)		13.82		14.77		15.59	
Total		$253.17		$271.97		$288.14	$
Harvest Machinery							
Combine	$14.10	$11.00	$14.10	$11.00	$14.10	$11.00	$
Haul	2.88	3.12	3.34	3.62	3.80	4.12	
Dry (LP Gas @ $1.75/gal.)	5.00	26.25	5.80	30.45	6.60	34.65	
Handle	1.25	0.62	1.45	0.72	1.65	0.82	
Total	$23.23	$40.99	$24.69	$45.79	$26.15	$50.59	$
Labor							
2.85 hours @ $11.00	$31.35		$31.35		$31.35		$
Land							
Cash rent equivalent	$155.00		$190.00		$225.00		$
Total fixed, variable							
Per acre	$230.18	$313.96	$266.64	$337.56	$303.10	$358.53	Yield:
Per bushel	$1.84	$2.51	$1.84	$2.33	$1.84	$2.17	bu./acre
Total cost per acre	$544.14		$604.20		$661.63		$
Total cost per bushel	$4.35		$4.17		$4.01		$

[1/] *Chisel plow, tandem disk, apply N, field cultivate, plant, cultivate, and spray. See the Estimated Machinery Costs table.*

Corn following Soybeans

	140 bu. per acre		160 bu. per acre		180 bu. per acre		
	Fixed	Variable	Fixed	Variable	Fixed	Variable	Your Estimate
Preharvest Machinery [1/]	$17.10	$15.60	$17.10	$15.60	$17.10	$15.60	$
Seed, Chemical, etc.	**Units**		**Units**		**Units**		
Seed @ $2.10 per 1000 k.	25,000	$52.50	30,000	$63.00	35,000	$73.50	$
Nitrogen @ $0.46 per lb.	120	$55.20	120	$55.20	120	$55.20	
Phosphate @ $0.50 per lb.	55	$27.50	60	$30.00	70	$35.00	
Potash @ $0.27 per lb.	40	$10.80	50	$13.50	55	$14.85	
Lime (yearly cost)		7.00		7.00		7.00	
Herbicide		25.20		25.20		25.20	
Crop Insurance		15.00		15.00		15.00	
Miscellaneous		8.00		9.00		10.00	
Interest on preharvest variable costs (8 months @ 8%)		11.56		12.45		13.41	
Total		$212.76		$230.35		$249.16	$
Harvest Machinery							
Combine	$14.10	$11.00	$14.10	$11.00	$14.10	$11.00	$
Haul	3.22	3.50	3.68	4.00	4.14	4.50	
Dry (LP Gas @ $1.75/gal.)	5.60	29.40	6.40	33.60	7.20	37.80	
Handle	1.40	0.70	1.60	0.80	1.80	0.90	
Total	$24.32	$44.60	$25.78	$49.40	$27.24	$54.20	$
Labor							
2.6 hours @ $11.00	$28.60		$28.60		$28.60		$
Land							
Cash rent equivalent	$155.00		$190.00		$225.00		$
Total fixed, variable							
Per acre	$225.02	$272.96	$261.48	$295.35	$297.94	$318.96	Yield:
Per bushel	$1.61	$1.95	$1.63	$1.85	$1.66	$1.77	bu./acre
Total cost per acre	$497.98		$556.83		$616.90		$
Total cost per bushel	$3.56		$3.48		$3.43		$

[1/] *Apply N, tandem disk, field cultivate, plant, cultivate, and spray. See the Estimated Machinery Costs table.*

2008 Iowa Farm Business Management Career Development Event

INDIVIDUAL EXAM KEY

Section A. Economic Principles

1. C
2. B
3. A
4. A
5. B
6. D
7. B
8. A
9. C
10. C
11. C
12. D
13. D
14. C
15. C
16. A
17. A
18. B
19. A
20. D
21. D
22. C
23. A
24. D
25. B

Section B. Records and Analysis

26. C Total farm liabilities = total current liabilities + total fixed liabilities
= $370,101 + $703,028
= $1,073,129

27. B Percent increase in market value net worth = change in farm net worth (market) ÷ farm net worth last year (market)
= ($1,773,163 - $1,646,805)/$1,646,805 x 100
= 7.7%

28. C Original cost less depreciation.

29. A Debt-to-equity ratio = total farm liabilities ÷ farm net worth
= $1,073,129 ÷ $1,773,163
= 61%

30. D Working capital = total current assets - total current liabilities
= $542,132 - $370,101
= $172,031

31. D Only contractual obligations that are past due appear on the net worth statement (according to the Farm Financial Standards Guidelines).

32. B Accrued interest = principal borrowed x interest rate x time since the loan was taken out
= $100,000 x 6.5% x (61 day/365 days)
= $1,086

33. B Return on equity = net farm income ÷ average farm net worth (market)
= $65,259 ÷ ($1,773,163 + $1,646,805)/2
= $65,259 ÷ $1,709,984
= 3.8%

34. B Gross farm revenue = total cash income + ending inventory value – beginning inventory value
= $631,507 + $567,750 - $575,525
= $623,732

35. D Machinery sales would be considered sales of farm capital assets

36. B Sales of crops = $336,109

37. C Operating loan needed = net cash flow (negative) – beginning cash balance + desired ending cash balance
= $42,448 - $16,092 + $2,000
= $28,356

38. B Cash rent payments are $50,000 in March –April and $50,000 in November-December.

39. B Net cash flow is projected to be $47,850 in May-June.

40. D Any of these actions would improve net cash flow in January-February.

41. D Cash gross farm income = livestock income + crop sales + USDA payments + other
= $469,260 + $336,109 + $18,000 + $6,000
= $829,369

42. C Principal payments on a loan are a cash outflow but not an expense.

43. B An operating loan will be needed in Jan.-Feb., Mar.-Apr., Jul.-Aug. and Sept.-Oct. to eliminate negative ending cash balance.

44. A Projected new terms to receive are $20,000 in May-June.

45. C Profit per cow = gross income – total of all costs
= $4,458.90 - $4,237.51
= $221.39

46. B Breakeven milk price = (total of all costs – nonmilk revenue) ÷ cwt. Of milk sold
= ($4,237.51 - $315.90 - $156.00 - $147.00) ÷ 240 cwt.
= $3,618.61 ÷ 240
= $15.08 per cwt.

47. A Breakeven level of milk production = (total of all costs – nonmilk revenue) ÷ expected milk sale price
= ($4,237.51 - $315.90 - $156.00 - $147.00) ÷ $16.00 per cwt.
= $3,618.61 ÷ $16
= 226 cwt.

48. D Feed cost per cwt. = total feed costs ÷ cwt. milk sold
= $1,809.55 ÷ 240 cwt.
= $7.54 per cwt.

49. A Change in profit per cow = change in price of corn x corn equivalents fed
= ($5.00 - $4.00) x 113 bu.
= $113 decrease

50. A Number of years in production = 1 ÷ cull cow rate
= 1 ÷ .39
= 2.56 years

51. C Pounds of feed per pound of milk produced
= [(133 bu. x 56 lb.) + (8 tons x 2,000 lb.) + (6 tons x 2,000 lb.) + 323 lb. + 1,855 lb. + 1,361 lb. + 111 lb.] ÷ 24,000 lb. milk
= 37,978 lb. feed ÷ 24,000 lb. milk
= 1.58 lb. feed per lb. milk

52. B Present value = sum of annual net cash flows discounted.
= $500 + $500/1.10 + $500/$1.10^2$ + $500/$1.10^3$
= $500 + 455 + 413 + 376
= $1,744

53. C Average depreciation expense = (initial cost – salvage value) ÷ useful life
= ($120,000 - $30,000) ÷ 30 years
= $90,000 ÷ 30 = $3,000

54. C Average annual interest cost = average value x cost of capital
= [($120,000 + $30,000) ÷ 2] x 7%
= $75,000 x 7%
= $5,250

Section C. Risk Management

55. C
56. A
57. A
58. A
59. B
60. B
61. D
62. B
63. D
64. C
65. B
66. D
67. A
68. A
69. C
70. B
71. C
72. C
73. C
74. B
75. D

Team Participation Event – "Individual" Portion KEY
2008 Iowa Vo-Ag/FFA
Farm Business Management Career Development Event
(Maximum possible pts: 5 per individual and 15 per team)

1. D

2. B (80,000 K. per unit) ÷ (30,000 K. per acre) = 2.67 units per acre

3. D

4. C

5. B

Team Participation Event – "Team" Portion (35 pts.) - KEY

2008 Iowa Vo-Ag/FFA
Farm Business Management Career Development Event

1. C The breakeven price of corn = the total production cost per bushel. From the budgets given, the total cost per bu. decreases with increases in yield (see bottom line, each budget).

2. D The corn following soybeans budget shows a 15 bu. per acre yield increase and a 55 pound per acre reduction in N use.

3. B The budgets state a "land" expense = "cash rent equivalent" which increases for higher-yielding land. Land owners should include this as an opportunity cost, so their costs would not be zero.

4. A ($2.10 per 1000 K) x (80 1000 K per unit) = $168.00

5. A = (original budgeted seed expense per acre) (1.2)

   = ($63.00) (1.2) = $75.60

6. B = (new total cost per acre) ÷ (new yield per acre)

   = (previous total cost per acre + $20 rent increase) ÷ 200 bu. per acre

   = ($616.90 + $20.00) ÷ 200 bu. per acre

   = $636.90 ÷ 200 = $3.18 per bu.

7. D Profit CS < Profit CC

   ⇒ profit corn + profit soybeans < profit corn + profit corn

   ⇒ ($5.00 - $3.43) (180 bu.) + profit soybeans
   < ($5.00 – 4.01) (165 bu.) + ($5.00 – 4.01) (165 bu.)

   ⇒ $282.60 + profit soybeans < $163.35 + $163.35

   ⇒ profit soybeans < ($326.70 - $282.60) = $44.10